



REMARKS

Claims 569-1711 were previously pending in this application. Claims 569, 586, 716, 721, 738, 859, 872-873, 890, 1011-1012, 1024-1025, 1042, 1163-1164, 1176-1177, 1197-1198, 1235, 1281, 1298, 1393, 1411, 1453, 1573, 1582, 1693 and 1701-1704 have been amended. New claims 1712-1718 have been added. Accordingly, claims 569-1718 are presented for further examination on the merits.

This Supplemental Amendment follows Applicants' May 23, 2000 Amendment Under 37 C.F.R. §1.115 and provides a number of minor changes to the previously pending claims. In claims 569, 586, 721, 738, 859, 872-873, 890, 1011-1012, 1024-1025, 1042, 1163-1164, 1176-1177, 1197-1198, 1281, 1298, 1411 and 1701-1704, the term "detectable" has been inserted for the purpose of clarifying the various "labeled nucleic acid fragments," "labeled complementary nucleic acid," "oligo- or polynucleotides" and "protein" recited therein. In claim 716, the language has been changed to reflect that the "indirectly detectable signal" is "provided by said one or more modified or labeled nucleotides or nucleotide analogs . . ." The $-CH_2NH-$ moiety in claim 1235 has now been correctly written with a subscripted "2." In claim 1393, a space has been inserted between "oligo-" and "or polynucleotide." The word "said" has been inserted into claim 1453 to clarify that the "signaling component or indicator molecule" was previously recited in claim 1446 from which claim 1453 depends. An inadvertent period [.] in the middle of claims 1573 and 1693 have been deleted.

It is believed that the foregoing amendments are minor in nature and do not constitute the insertion of any new matter into Applicants' disclosure.

New claims 1712-1718 have also been added above. These new claims are directed to the use of Applicants' modified or labeled nucleotides or nucleotide analogs in detection processes involving gels. Independent claim 1712 recites four steps in a detection process. The first step calls for providing or generating (i) one or more detectable oligonucleotides or polynucleotides, and (ii) a sample that may contain said nucleic acid of interest. Each of said detectable oligonucleotides or polynucleotides is defined as "comprising a sequence sufficiently complementary to



said nucleic acid of interest or to a portion thereof to hybridize thereto, wherein said one or more detectable oligonucleotides or polynucleotides comprise one or more modified or labeled nucleotides or nucleotide analogues, which nucleotide analogs can be attached to or coupled to or incorporated into DNA or RNA, and wherein said modified or labeled nucleotides or nucleotide analogs have been modified or labeled on at least one of the sugar moiety, the sugar analog, the phosphate moiety, the phosphate analog, the base moiety, or the base analog thereof." The second step in claim 1712 calls for "forming in liquid phase hybrids comprising said one or more detectable oligonucleotides or polynucleotides and said nucleic acid of interest." The last two steps of claim 1712 call for "separating or resolving in a gel said formed hybrids" and "detecting non-radioactively the separated or resolved hybrids."

The rest of new claims 1713-1718 depend from claim 1712. Claim 1713 recites "wherein after said hybrid forming step, the liquid phase is subjected to nuclease treatment." Claim 1714 recites "wherein said nucleic acid of interest is selected from the group consisting of DNA, RNA and DNA-RNA." Claim 1715 is directed to such detection process "wherein said one or more detectable oligonucleotides or polynucleotides are selected from the group consisting of DNA, RNA and DNA-RNA." Claim 1717 recites that "said non-radioactive detection step is carried out directly or indirectly." The other two new claims, 1716 and 1718, provide Markush members for the "one or more detectable oligonucleotides or polynucleotides" (claim 1716) and the carrying out of the detectable signal (claim 1718).

It is believed that the subject matter of new claims 1712-1718 is fully disclosed and supported by Applicants' originally filed specification. See, for example, page 84, second paragraph ("This type of self-signaling molecule can be used to monitor any nucleic acid hybridization reaction. It is particularly important for detecting nucleic acids in gels (for example, sequencing gels).")

Entry of the above amendments and newly presented claims is respectfully requested.

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Under 37 C.F.R. §1.115 - June 19, 2000]



SUMMARY AND CONCLUSIONS

Claims 569-1718 have been presented for further examination on the
merits with claims 1712-1718 having been newly added above.

The fee for new claims 1712-1718 is \$204, based upon the \$126 fee
for the presentation of seven (7) additional new claims $7 \times \$18 = \126
and one (1) new independent claims $1 \times \$78 = \78 . As indicated in the
accompanying Transmittal form, authorization is hereby given to charge the
amount of \$204 to Deposit Account No. 05-1135. No other fee or fees are
believed due. In the event that any other fee or fees are due, however,
authorization is hereby given to charge the amount of any such fee(s) to
Deposit Account No. 05-1135, or to credit any overpayment thereto.

If a telephone conversation would further the prosecution of the
present application, Applicants' undersigned attorney request that he be
contacted at the number provided below.

Respectfully submitted,

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